



Declaration of Conformity



Type of equipment: NETWORK CAMERA
Brand Name /Trade Mark: HANWHA
Type designation /model: SCB-6003P
Applicant: Hanwha Techwin Company Limited

In accordance with the following Directives:

2004/108/EC The Electromagnetic Compatibility Directive
Including amendments by the CE Marking Directive 93/68/EEC

2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

The following harmonized European standards or technical specifications have been applied:

EN 55022:2010	Limits and methods of measurement of radio disturbance characteristics of information technology equipment
EN 50130-4:2011+A1:2014	Product family standard: Immunity requirements for components of fire, intruder and social alarm systems
EN 61000-3-3:2013	Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
EN 61000-4-2:2009	Electrostatic discharge immunity test
EN 61000-4-3:2006+A2:2010	Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4:2012	Electrical fast transient/burst immunity test
EN 61000-4-5:2014	Surge immunity test
EN 61000-4-6:2009	Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-11:2004	Voltage Dips and Voltage Interruptions Immunity test

The CE Marking on the products and/or their packaging signifies that Hanwha Techwin Company Limited holds the reference technical file available to the European Union authorities.

Place and date of issue: 1204, Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea / Feb, 11, 2016

Authorized Signatory: Name : Jei Soon, Kang
Title : Principal Research Engineer

Signatur :



EMC TEST REPORT For CE

Test Report No. : KES-E1-16T0045
Date of Issue : Feb. 11, 2016
Product name : ANALOG CAMERA
Model/Type No. : SCB-6003P
Variant Model : -
Applicant : Hanwha Techwin Company Limited
Applicant Address : 1204, Changwon-daero, Seongsan-gu, Changwon-si,
Gyeongsangnam-do, korea
Manufacturer : Tianjin Samsung Techwin Opto-Electronic Co., Ltd.
Manufacturer Address : No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin,
300385, People's Republic of China
Date of Receipt : Jan. 06, 2016
Test date : Jan. 20, 2016 – Jan. 22, 2016
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Hyo Jin, Kim
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

**KES Co., Ltd.**

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:
KES-E1-16T0045
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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Feb. 11, 2016	KES-E1-16T0045	Issued

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1.0 General Product Description

Main Specifications of E.U.T are:

SCB-6003N		SCB-6003P
Video		
Imaging Device	1/2.9" 2M CMOS	
Total Pixels	2,000(H) x 1,121(V) 2.24M pixels	
Effective Pixels	1,984(H) x 1,105(V) 2.19M pixels	
Scanning System	Progressive Scan	
Horizontal Resolution	1000 TVL	
Min. Illumination	Color : 0.15Lux (F1.2, 50IRE); 0.09Lux (F1.2, 30IRE) B/W : 0.015Lux (F1.2, 50IRE); 0.009Lux (F1.2, 30IRE)	
S / N Ratio	52dB (AGC off, Weight on)	
Video Output	BNC(AHD, CVBS Selectable)	
Resolution	1920 x 1080	
Max. Framerate	30fps @1080p, 30fps@ 720p	
Lens Type		
Focal Length (Zoom Ratio)	-	
Max. Aperture Ratio	-	
Angular Field of View	-	
Min. Object Distance	-	
Focus Control	-	
Lens Type	-	
Mount Type	C/CS	
Auto Back Focus(ABF)	-	
Operational		
IR LED	-	
Viewable length	-	
On Screen Display	English, Korean, Japanese, German, Italian, French, Spanish, Russian, Czech, Polish, Romanian, Serbian, Swedish, Danish, Turkish, Portuguese	
Camera Title	Off / On (Displayed 15 characters)	
Day & Night	Auto (ICR) / External / Color / B/W	
Backlight Compensation	Off / User BLC / HLC	
Wide Dynamic Range	D-WDR	
Contrast Enhancement	-	
Digital Noise Reduction	SSNR4 (Off / On)	



1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage ☐ 220 Vac ☐ 230 Vac ☐ 240 Vac ☒ 24 Vac ☒ 12 Vdc
Frequency ☐ 50 Hz ☐ 60 Hz ☐ Hz

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
ANALOG CAMERA	SCB-6003P	-	Tianjin Samsung Techwin Opto-Electronic Co., Ltd.	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
MONITOR	M1950DM	-	204KCXM31738	-
AC/DC Adapter	PA-1650-68	OE9FA612314100070	LITE-ON TECHNOLOGY CORPORATION	-
Controller	SPC-1010	-	Samsung Electronic Co.,Ltd.	-
AC/DC Adapter	-	-	-	-

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
ANALOG CAMERA (E.U.T)	BNC	MONITOR	RCA	5.0	U
	RS-485	Controller	RS-485	3.0	U

* Unshielded=U, Shielded=S

1.7 E.U.T Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

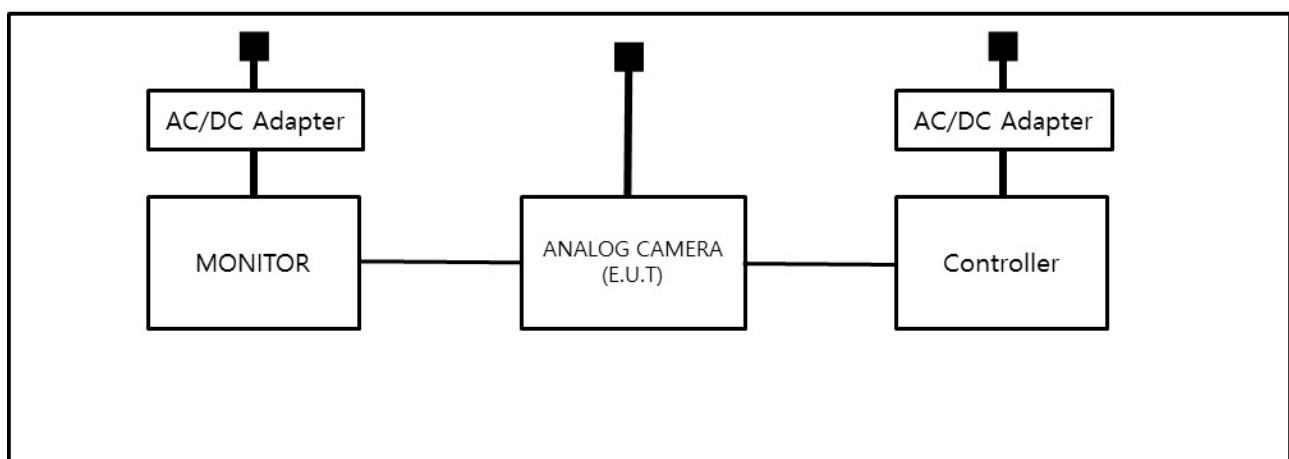
Test mode	Normal operating
OP	MONITOR CHECK

- Input power condition during the measurements was 12 V (dc), 24 V (ac)

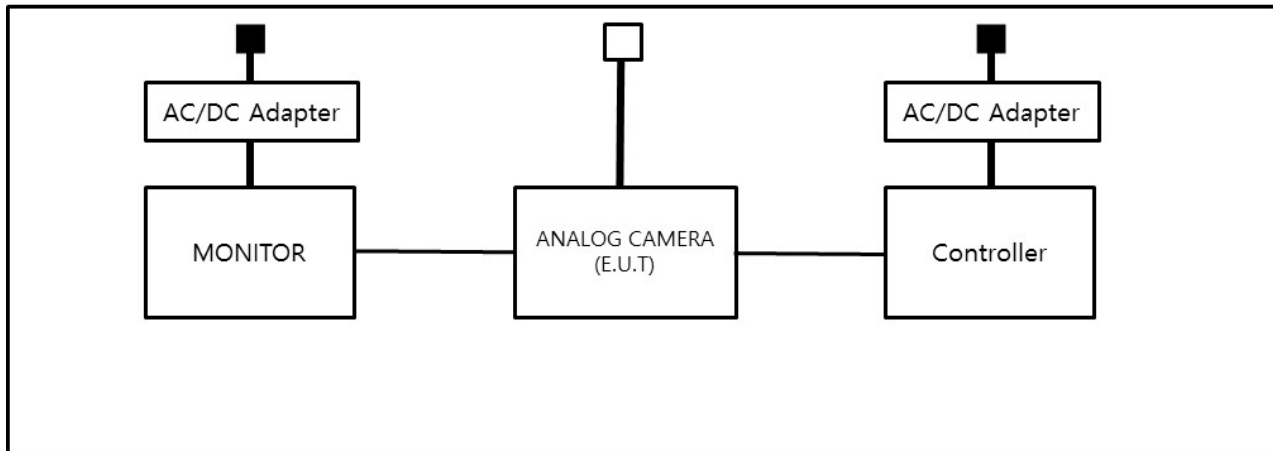
1.8 Configuration

■ AC Main
□ DC Main

- 24 V (ac)



- 12 V (dc)



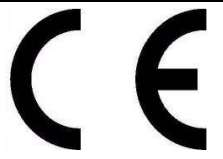
1.9 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

1.10 Test Facility

The measurement facility is located at 473-29 Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

1.11 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	
JAPAN	VCCI	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	 R-4308, C-4798, T-2311, G-914
KOREA	MSIP	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
Canada	IC	3 & 10 meter Open Area Test Sites and one conducted site	 4769B-1
Europe	CE	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	
International	KOLAS	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **EMC – Directive 2004/108/EC**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☒ EN 55022:2010

☒ Class A

☐ Class B

☐ EN 55024:2010

☒ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☒ EN 61000-3-3:2013

☐ EN 61326-1:2013

☐ VCCI V-3 / 2013.04

☐ Class A

☐ Class B

☐ AS / NZS CISPR22:2009 +A1:2010

☐ Class A

☐ Class B

☐ 47 CFR Part 15, Subpart B / ANSI C63.4-2009

☐ Class A

☐ Class B

☐ IC Regulation ICES-003 : 2012
/ ANSI C63.4-2014

☐ Class A

☐ Class B

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B



KES Co., Ltd.

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

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☐ **R&TTE – Directive 1999/5/EC**

☐ EN 301 489-1 V1.9.2

- ☐ Equipment for fixed use
- ☐ Equipment for vehicular use
- ☐ Equipment for portable use

☐ EN 301 489-3 V1.6.1

☐ EN 301 489-17 V2.2.1

☐ EN 60945:2002

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Jan. 20, 2016

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESR3	R&S	101783	05, 06, 2016
☒	LISN	ENV216	R&S	101137	02, 10, 2016
☒	LISN	ENV216	R&S	101786	05, 06, 2016
☒	Electro wave Shieldroom	-	SEMITEC	-	-

Test Conditions

Temperature: 18,4 °C

Relative Humidity: 37,5 %

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

2.2 Conducted Emissions at Telecommunication Ports

Test Date

N/A

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☐	EMI Test Receiver	ESR3	R&S	101783	05, 06, 2016
☐	LISN	ENV216	R&S	101137	02, 10, 2016
☐	LISN	ENV216	R&S	101786	05, 06, 2016
☐	8-Wire ISN CAT3	CAT3 8158	Schwarzbeck Mess	8158-0019	04, 02, 2016
☐	8-Wire ISN CAT5	CAT5 8158	Schwarzbeck Mess	8158-0030	04, 02, 2016
☐	8-Wire ISN CAT6	NTFM 8158	Schwarzbeck Mess	8158-0029	08, 14, 2016
☐	Electro wave Shieldroom	-	SEMITEC	-	-

Test Conditions

Temperature: °C

Relative Humidity: %

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☐ PASS
☐ NOT PASS
☒ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Jan. 21, 2016

Test Location

☐ Open Area Test Site #1

☒ Open Area Test Site #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESR3	R&S	101781	05, 06, 2016
☒	Trilog-Broadband Antenna	VULB 9163	SCHWARZBECK	9168-713	05, 15, 2017
☒	Open Area Test Site	-	KES	-	-
☒	Antenna Mast	-	DAEIL EMC	-	-
☒	Turn Table	-	DAEIL EMC	-	-

Test Conditions

Temperature: -4,1 °C

Relative Humidity: 53,0 %

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

☒ PASS

☐ NOT PASS

☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Jan. 21, 2016

Test Location

Semi Anchoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESU26	R&S	100552	05, 06, 2016
☒	Broadband Coaxial Preamplifier	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10, 23, 2016
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 07, 2017
☒	Semi Anchoic Chamber #2	-	SEMITEC	-	-
☒	Antenna Mast	-	AUDIX	-	-
☒	Turn Table	-	AUDIX	-	-

Test Conditions

Temperature: 21,2 °C

Relative Humidity: 37,2 %

Frequency Range of Measurement

1 GHz to 6 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.5 Harmonic Current Emissions

Test Date

N/A

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☐	AC Source	ACS 500 N	EM TEST	V1024106760	08, 13, 2016
☐	Digital Power Analyzer	DPA 500 N	EM TEST	V1024106759	08, 13, 2016

Test Conditions

Temperature: °C
Relative Humidity: %

Classification of Equipment for Harmonic Current Emissions

- ☐ Class A
- ☐ Class B
- ☐ Class C(Below 25 W)
- ☐ Class C(Above 25 W)
- ☐ Class D

Test Results

The requirements are:

- ☐ PASS
- ☐ NOT PASS
- ☒ NOT APPLICABLE

Remarks

Because the E.U.T power is less than 75 W, limits are not specified.



2.6 Voltage Fluctuations and Flicker

Test Date

Jan. 20, 2016

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	AC Source	ACS 500 N	EM test	V1024106760	08, 13, 2016
☒	Digital Power Analyzer	DPA 500 N	EM test	V1024106759	08, 13, 2016

Test Conditions

Temperature: 18,4 °C
Relative Humidity: 37,5 %

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

3.0 Criteria for compliance

Criteria for compliance was based on the following guidelines:

EN 50130-4:2011 +A1:2014 Alarm systems-Part 4: Electromagnetic compatibility Product family standard: Immunity requirements for components of fire, intruder and social alarm systems

The variety and the diversity of the apparatus within the scope of this document makes it difficult to define precise criteria for the evaluation of the immunity test results.

If as a result of the application of the tests defined in this standard, the apparatus becomes dangerous or unsafe then the apparatus shall be deemed to have failed the test.

A functional description and a definition of performance by the manufacture and noted in the test report, based on the following criteria:

Electrostatic discharge

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing that is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

Radiated electromagnetic fields

There shall be no damage, malfunction or change of status due to the conditioning.

Flickering of an indicator during the application of discharge is permissible, providing which could be interpreted by associated equipment as a change, and no such

Flickering of indicators occurs at a field strength of 3 V/m.

For components of CCTV systems, where the picture is allowed at 10 V/m, providing.

(a) there is no permanent damage or change to EUT

(e.g. no corruption of memory or changes to programmable setting etc.)

(b) at 3 V/m, any deterioration of the picture is so minor that the system could still be used; and

(c) there is no observable deterioration of the picture at 1 V/m.

Fast transient burst / slow high energy voltage surge

There shall be no damage, malfunction or change of status due to the conditioning.
Flickering of an indicator during the application of discharge is permissible, providing
That there is no residual is permissible, providing that there is no residual change in the EUT or any
change in outputs, which could be interpreted by associated equipment as a change.

Conducted RF immunity

There shall be no damage, malfunction or change of status due to the conditioning.
Flickering of an indicator during the application of discharge is permissible, providing
That there is no residual is permissible, providing that there is no residual change in the EUT or any
change in outputs, which could be interpreted by associated equipment as a change,
and no such flickering of indicators oeuvres at $U = 130 \text{ dB}\mu\text{V}$.

For component of CCTV systems, where the status is monitored by observing the TV picture,
then deterioration of the picture is allowed at $U = 140 \text{ dB}\mu\text{V}$, providing:

- (a) there is no permanent damage or change to the EUT
(e.g. no corruption of memory or changes to programmable settings etc.)
- (b) at $U = 130 \text{ dB}\mu\text{V}$, any deterioration of the picture is so minor that the system could
still be used; and
- (c) there in no observable deterioration of the picture at $U = 120 \text{ dB}\mu\text{V}$.

Voltage dip/interruption / Voltage variation

There shall be no damage, malfunction or change of status due to the conditioning.
Flickering of an indicator during the conditioning is permissible, providing that there is no residual
change in the EUT or any change in outputs, which could be interpreted by associated equipment
as a change. The EUT shall meet the acceptance criteria for the functional test, after the conditioning.

3.1 Electrostatic Discharge

Reference Standard

EN 61000-4-2:2009

Test Date

Jan. 20, 2016

Test Location

EMS-ESD: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	ESD SIMULATOR	ESS-2000	Noise Ken	ESS05X4620	06, 30, 2016
☒	HCP	-	Noise Ken	-	-
☒	VCP	-	Noise Ken	-	-

Test ConditionsTemperature: 18,4 °C
Relative Humidity: 37,5 %
Atmospheric Pressure: 101,8 kPa**Test Specifications**Discharge Factor: ≥ 1 s

Discharge Impedance: 330 ohm / 150 pF

Kind of Discharge: Air, Contact (direct and indirect)

Polarity: Positive and Negative

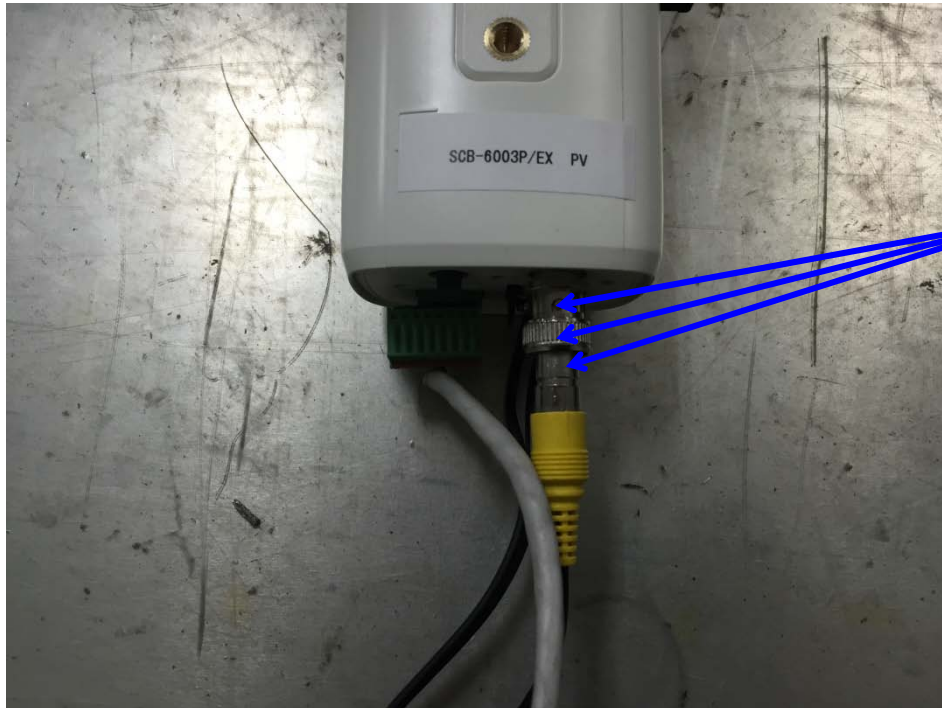
Number of Discharge: 10 at all locations for Air discharge
10 at all locations for Contact discharge

Discharge Voltage:	Contact	Air	HCP	VCP
	☐ 2 kV	☒ 2 kV	☐ 2 kV	☐ 2 kV
	☐ 4 kV	☒ 4 kV	☐ 4 kV	☐ 4 kV
	☒ 6 kV	☐ 6 kV	☒ 6 kV	☒ 6 kV
	☐ 8 kV	☒ 8 kV	☐ 8 kV	☐ 8 kV
	☐ 15 kV	☐ 15 kV	☐ 15 kV	☐ 15 kV

Notes: HCP: Horizontal coupling plane
VCP: Vertical coupling planeRequired Performance Criteria: ☒ Complied

Location of Discharge:

Air
Contact



1. Contact



2. Contact

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3. Contact



4. Air

**Test Data****- 12 V (dc)****Indirect Discharge**

No.	Test Point	Discharge Method	Performance	Remarks
			Observation	
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

Direct Discharge

No.	Test Point	Discharge Method	Performance	Remarks
			Observation	
1	BNC Port	Contact Discharge	Complied	-
2	Enclosure	Contact Discharge	Complied	-
3	Screw	Contact Discharge	Complied	-
4	Lens Port	Air Discharge	Complied	-

- 24 V (ac)**Indirect Discharge**

No.	Test Point	Discharge Method	Performance	Remarks
			Observation	
1	HCP Contact	Contact Discharge	Complied	-
2	VCP Contact	Contact Discharge	Complied	-

Direct Discharge

No.	Test Point	Discharge Method	Performance	Remarks
			Observation	
1	BNC Port	Contact Discharge	Complied	-
2	Enclosure	Contact Discharge	Complied	-
3	Screw	Contact Discharge	Complied	-
4	Lens Port	Air Discharge	Complied	-

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.2 Radiated Electric Field Immunity

Reference Standard

EN 61000-4-3:2006 +A2:2010

Test Date

Jan. 21, 2016

Test Location

EMS-RS: ☐ Semi Anchoic Chamber #1 ☒ Semi Anchoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☐	Integrated measurement system for EMS	IMS	R&S	100027	08, 13, 2016
☐	Average Power Sensor	NRP-Z91	R&S	100784	08, 13, 2016
☐	Power Amplifier	100W1000M1	AMPLIFIER RESEARCH	19510	08, 13, 2016
☐	High Power Dual Directional Coupler	C3910	WERLATONE	30447	08, 13, 2016
☐	Hybrid Log-Periodic Antenna	HLP-2603	EMC Automation (TDK)	100400	-
☐	Semi Anchoic Chamber #1	-	KES	-	-
☒	SIGNAL GENERATOR	SMB 100A	R&S	108252	08, 13, 2016
☒	BROADBAND AMPLIFIER	BBA100	R&S	101239	08, 13, 2016
☒	BROADBAND AMPLIFIER	100S1G6M1	AR	579931	08, 13, 2016
☒	POWER METER	NRP2	R&S	103475	08, 13, 2016
☒	AVG POWER SENSOR	NRP-Z91	R&S	102526	08, 13, 2016
☒	AVG POWER SENSOR	NRP-Z91	R&S	102527	08, 13, 2016
☒	Stacked Log.-Per.Antenna	STLP 9128 D	Schwarzbeck	9128D038	-
☒	Semi Anchoic Chamber #2		SEMITEC	-	-

**KES Co., Ltd.**

C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Test report No.:

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Test Conditions

Temperature: 21,2 °C
Relative Humidity: 37,2 %
Atmospheric Pressure: 101,2 kPa

Test Specifications

Antenna Polarization: Horizontal & vertical unless indicated otherwise

Antenna Distance: ☒ 3 m

Field Strength: ☐ 1 V/m ☐ 3 V/m
☒ 10 V/m

Frequency Range: ☐ 80 MHz to 1 GHz ☐ 1,4 GHz to 2,7 GHz
☒ 80 MHz to 2,7 GHz

Modulation: ☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)

Frequency step: ☒ 1 % stepDwell Time: ☒ 1 s ☐ 3 s# of Sides Radiated: ☒ 4Required Performance Criteria: ☒ Complied**Test Data**

- 12 V (dc)

Side Exposed	Observation	
	Horizontal	Vertical
Front	Complied	Complied
Right	Complied	Complied
Back	Complied	Complied
Left	Complied	Complied

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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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- 24 V (ac)

Side Exposed	Observation	
	Horizontal	Vertical
Front	Complied	Complied
Right	Complied	Complied
Back	Complied	Complied
Left	Complied	Complied

Note: "Blank" = Not performed

Observations:

Complied – No degradation of function

Test Results

- ☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

PASS Required Performance Criteria.

3.3 Electrical Fast Transients/Bursts

Reference Standard

EN 61000-4-4:2012

Test Date

Jan. 22, 2016

Test Location

EMS-EFT: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	Ultra Compact Simulator	UCS 500 N5	EM TEST	V0936105120	07, 14, 2016
☒	Capacitive Coupling Clamp	HFK	EM TEST	070925	07, 14, 2016
☒	MotorVariac	MV2616	EM TEST	V0936105123	07, 14, 2016
☐	Transient Test System	TRA3000F-S-D-V	EMC PARTNER AG	1524	04, 01, 2016
☐	MotorVariac	VAR-EXT1000	EMC PARTNER AG	1507	04, 01, 2016
☐	Capacitive Coupling Clamp	CN-EFT1000	EMC PARTNER AG	1528	04, 01, 2016

Test Conditions

Temperature: 20,6 °C
Relative Humidity: 39,3 %
Atmospheric Pressure: 101,4 kPa

Test Specifications

Pulse Amplitude & Polarity:
(Power Lines) ☐ ± 1.0 kV ☒ ± 2.0 kV
☐ ± 4.0 kV

Pulse Amplitude & Polarity:
(Signal Lines) ☐ ± 0.5 kV ☒ ± 1.0 kV
☐ ± 2.0 kV

Burst Period: ☒ 300 ms ☐ 2 s

Repetition Rate: ☐ 5 kHz ☒ 100 kHz

Duration of Test Voltage: ☒ ≥ 1 min

Required Performance Criteria: ☒ Complied



Test Data

- 12 V (dc)

☒ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	OBSERVATIONS	
	(+) Burst (kV)	(-) Burst (kV)
L - N	Complied	Complied

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	OBSERVATIONS	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	OBSERVATIONS	
	(+) Burst (kV)	(-) Burst (kV)
BNC	Complied	Complied
RS-485	Complied	Complied

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Tel: +82-31-425-6200 / Fax: +82-31-424-0450
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- 24 V (ac)

☒ Input a.c. power ports – Coupling/Decoupling Network used

Mode of Application	OBSERVATIONS	
	(+) Burst (kV)	(-) Burst (kV)
L - N	Complied	Complied

☐ Input d.c. power ports – Coupling/Decoupling Network used

Mode of Application	OBSERVATIONS	
	(+) Burst (kV)	(-) Burst (kV)
-	-	-

☒ Signal ports and telecommunication ports – Coupling Clamp used

Mode of Application	OBSERVATIONS	
	(+) Burst (kV)	(-) Burst (kV)
BNC	Complied	Complied
RS-485	Complied	Complied

Note: "Blank" = Not performed

Observations:

A – No degradation of function

B – Distortion/Error of function (self-recoverable)

C – Loss of function

Test Results☒ PASS Required Performance Criteria☐ NOT PASS Required Performance Criteria**Remarks**

PASS Required Performance Criteria.

3.4 Surge Transients

Reference Standard

EN 61000-4-5:2014

Test Date

Jan. 22, 2016

Test Location

EMS-Surge: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	Ultra Compact Simulator	UCS 500 N5	EM TEST	V0936105120	07, 14, 2016
☒	MotorVariac	MV2616	EM TEST	V0936105123	07, 14, 2016
☐	CDN	CNV 504N	EM TEST	V0936105121	04, 01, 2016
☐	Transient Test System	TRA3000F-S-D-V	EMC PARTNER AG	1524	04, 01, 2016
☐	MotorVariac	VAR-EXT1000	EMC PARTNER AG	1507	04, 01, 2016

Test Conditions

Temperature: 20,6 °C
Relative Humidity: 39,3 %
Atmospheric Pressure: 101,4 kPa

Test Specifications

Signal Lines

Source Impedance: 12 ohm for common mode and 2 ohm for differential mode

Surge Amplitude: Common Mode
☐ (0,5 / 1,0 / 2,0) kV
Differential Mode
☒ (0,5 / 1,0) kV
Signal lines
☒ (0,5 / 1,0) kV

Number of Surges: ☒ 5 surges per angle
Angle: ☒ 0°, 90°, 180°, 270° (input a.c. power port)
Polarity: ☒ Positive & Negative
Repetition Rate: ☐ 1 surge per min ☒ 1 surge per 30 sec.

Required Performance Criteria: ☒ Complied**Signal Lines**

Source Impedance: 42 ohm for common mode

Surge Amplitude: Common Mode
☐ (0,5 / 1,0) kVNumber of Surges: ☐ 5 SurgesPolarity: ☐ Positive & NegativeRepetition Rate: ☐ 1 surge per min ☐ 1 surge per 30 sec.Required Performance Criteria: ☐ Complied**Test Data**

-24 V (dc)

☒ Line to Line – Differential Mode

Mode of Application	OBSERVATIONS	
	(+) Surge (kV)	(-) Surge (kV)
L - N	Complied	Complied

☐ Line to Earth – Common Mode

Mode of Application	OBSERVATIONS	
	(+) Surge (kV)	(-) Surge (kV)
-	-	-

Signal Lines☒ Line to Earth – Common Mode

Mode of Application	OBSERVATIONS	
	(+) Surge (kV)	(-) Surge (kV)
BNC	Complied	Complied
RS-485	Complied	Complied

Note: "Blank" = Not performed

Observations:

A – No degradation of function

B – Distortion/Error of function (self-recoverable)

C – Loss of function

Test Results☒ PASS Required Performance Criteria☐ NOT PASS Required Performance Criteria**Remarks**

No any function degraded during the test.

3.5 Conducted Disturbance

Reference Standard

EN 61000-4-6:2009

Test Date

Jan. 22, 2016

Test Location

EMS-CS: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	Continuous Wave Generator	CWS 500N1	EM TEST	V0936105119	09, 25, 2016
☒	6dB Attenuator	ATT6	EM TEST	1208-34	08, 13, 2016
☒	CDN	CDN-M2/M3N	EM TEST	0909-06	08, 13, 2016
☐	CDN	CDN-T2-RJ11	EM TEST	0909-07	08, 13, 2016
☐	CDN	CDN-T4	EM TEST	0909-08	08, 13, 2016
☐	CDN	CDN-T8RJ45	EM TEST	0909-09	08, 13, 2016
☐	CDN	CDN-AF2	EM TEST	0909-10	08, 13, 2016
☐	CDN	CDN-AF4	EM TEST	0909-11	08, 13, 2016
☒	EM Injection Clamp	EM 101	Liithi	35943	02, 11, 2016
☐	Continuous Wave Generator	CWS 500 N1	EM TEST	P1251106910	04, 01, 2016
☐	6 dB Attenuator	ATT6/75	EM TEST	1012-35	04, 01, 2016
☐	CDN	CDN-M2/M3N	EM TEST	0213-10	04, 01, 2016
☐	EM Injection Clamp	EM 101	Liithi	36152	04, 06, 2016

Test Conditions

Temperature: 20,6 °C
Relative Humidity: 39,3 %
Atmospheric Pressure: 101,4 kPa



Test Specifications

Frequency range:

☒ 150 kHz to 80 MHz
☐ 150 kHz to 230 MHz

☐ 10 kHz to 30 MHz
☐ 10 kHz to 100 MHz

Voltage Level:

☐ 1 Vrms
☒ 10 Vrms

☐ 3 Vrms

Modulation:

☒ AM, 80 %, 1 kHz sine wave
☒ PM, 1 Hz (0,5 s ON : 0,5 s OFF)

Frequency step:

☒ 1 % step

Dwell Time:

☒ 1 s ☐ 3 s

Required Performance Criteria: ☒ Complied

Test Data

- 12 V (dc)

☒ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observation
Input d.c. power port	CDN (☒ M2, ☐ M3)	Complied

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observation
-	-	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observation
BNC	EM Injection Clamp	Complied
RS-485	EM Injection Clamp	Complied

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- 24 V (ac)

☒ Input a.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observation
Input d.c. power port	CDN (☒ M2, ☐ M3)	Complied

☐ Input d.c. power ports

Coupling Location (Line Stressed)	Coupling Method	Observation
-	-	-

☒ Signal ports and telecommunication ports

Coupling Location (Line Stressed)	Coupling Method	Observation
BNC	EM Injection Clamp	Complied
RS-485	EM Injection Clamp	Complied

Notes: CDN = Coupling Decoupling Network
EMC = Electro Magnetic Clamp
"blank" = Not performed

Observations:

A – No degradation of function
B – Distortion/Error of function (self-recoverable)
C – Loss of function

Test Results

☒ PASS Required Performance Criteria
☐ NOT PASS Required Performance Criteria

Remarks

No any function degraded during the test.

3.6 Voltage Dips and Short Interruptions

Reference Standard

EN 61000-4-11:2004

Test Date

Jan. 22, 2016

Test Location

EMS-Voltage dip: Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	Ultra Compact Simulator	UCS 500 N5	EM TEST	V0936105120	07, 14, 2016
☐	Capacitive Coupling Clamp	HFK	EM TEST	070925	07, 14, 2016
☒	MotorVariac	MV2616	EM TEST	V0936105123	07, 14, 2016
☐	Transient Test System	TRA3000F-S-D-V	EMC PARTNER AG	1524	04, 01, 2016
☐	MotorVariac	VAR-EXT1000	EMC PARTNER AG	1507	04, 01, 2016
☐	Capacitive Coupling Clamp	CN-EFT1000	EMC PARTNER AG	1528	04, 01, 2016

Test Conditions

Temperature: 20,6 °C
Relative Humidity: 39,3 %
Atmospheric Pressure: 101,4 kPa



Test Specifications & Observations/Remarks

- 24 V (ac)

<u>Test Level</u>	<u>Duration [in period/ms (50 Hz)]</u>	<u>Results</u>
☒ 20 % dip	☒ 250 /10	<u>Complied</u>
☒ 30 % dip	☒ 25 /10	<u>Complied</u>
☒ 60 % dip	☒ 10 /10	<u>Complied</u>
☒ 100 % dip	☒ 250 /10	<u>Complied</u>

- Voltage variations

☒ Unom + 10 %	☒ 253 V (ac)	<u>Complied</u>
☒ Unom + 15 %	☒ 195.5 V (ac)	<u>Complied</u>

Observations:

- A – No response observed from E.U.T
- B – Unit shuts down then automatically restarts when full voltage is restored.
- C – Unit shuts down then manually restarts when full voltage is restored or Loss of function.

Test Results

- ☒ PASS Required Performance Criteria
- ☐ NOT PASS Required Performance Criteria

Remarks

Refer to the results

APPENDIX A – TEST DATA

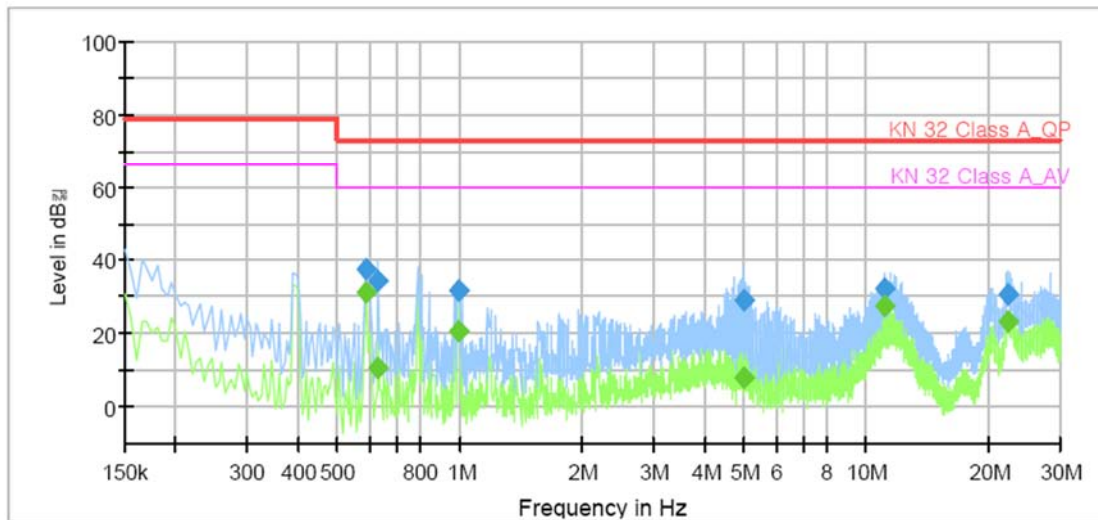
Conducted Emissions at Mains Power Ports

- 24 V (ac)

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	SCB-6003P
Mode	24 V
Operator Name:	KES



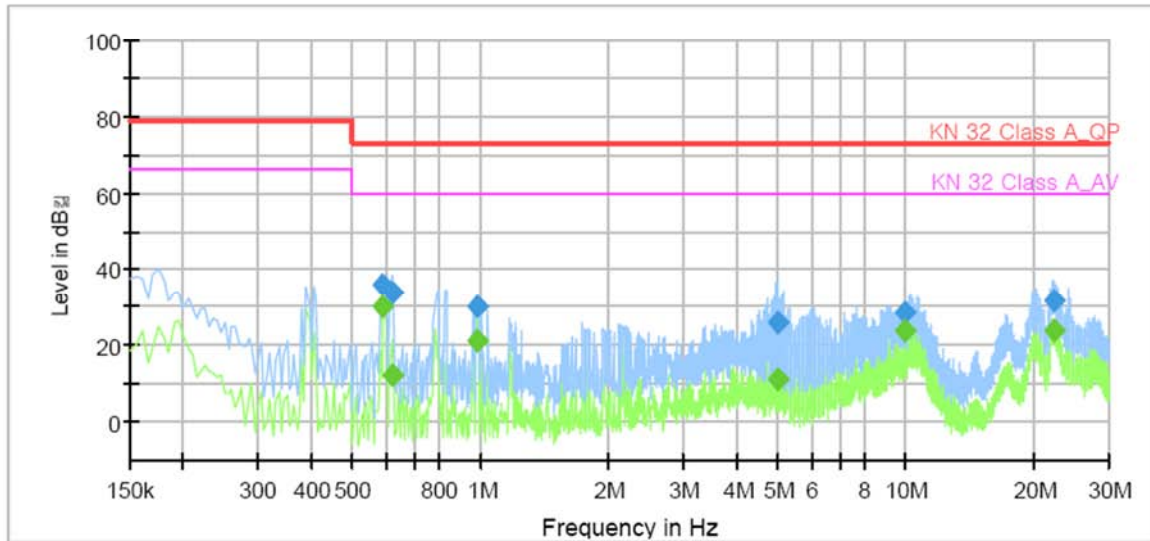
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.590000	---	31.23	60.00	28.77	1000.0	9.000	L1	9.7
0.590000	37.75	---	73.00	35.25	1000.0	9.000	L1	9.7
0.630000	---	10.63	60.00	49.37	1000.0	9.000	L1	9.7
0.630000	34.25	---	73.00	38.75	1000.0	9.000	L1	9.7
0.995000	---	20.60	60.00	39.40	1000.0	9.000	L1	9.7
0.995000	31.67	---	73.00	41.33	1000.0	9.000	L1	9.7
4.995000	---	7.82	60.00	52.18	1000.0	9.000	L1	9.8
4.995000	28.94	---	73.00	44.06	1000.0	9.000	L1	9.8
11.070000	---	27.79	60.00	32.21	1000.0	9.000	L1	10.0
11.070000	32.46	---	73.00	40.54	1000.0	9.000	L1	10.0
22.385000	---	23.21	60.00	36.79	1000.0	9.000	L1	10.2
22.385000	30.68	---	73.00	42.32	1000.0	9.000	L1	10.2

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	SCB-6003P
Mode	24 V
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.590000	---	30.14	60.00	29.86	1000.0	9.000	N	9.7
0.590000	36.18	---	73.00	36.82	1000.0	9.000	N	9.7
0.620000	---	12.44	60.00	47.56	1000.0	9.000	N	9.7
0.620000	33.93	---	73.00	39.07	1000.0	9.000	N	9.7
0.985000	---	21.08	60.00	38.92	1000.0	9.000	N	9.7
0.985000	30.37	---	73.00	42.63	1000.0	9.000	N	9.7
4.985000	---	11.21	60.00	48.79	1000.0	9.000	N	9.8
4.985000	25.83	---	73.00	47.17	1000.0	9.000	N	9.8
9.920000	---	23.91	60.00	36.09	1000.0	9.000	N	10.0
9.920000	28.62	---	73.00	44.38	1000.0	9.000	N	10.0
22.260000	---	23.78	60.00	36.22	1000.0	9.000	N	10.0
22.260000	31.56	---	73.00	41.44	1000.0	9.000	N	10.0



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C-3701, Simin-daero 365-40,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
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Conducted Emissions at Telecommunication Ports

[10 Mbps]

N/A

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[100 Mbps]

N/A

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**Radiated Electric Field Emissions(Below 1 GHz)**

- 12 V (dc)

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
122.15	20.72	H	4.00	9.47	2.86	33.05	40.00	6.95
223.03	19.33	H	4.00	11.81	4.08	35.22	40.00	4.78
371.29	22.82	H	4.00	15.03	5.45	43.30	47.00	3.70
483.00	17.89	H	4.00	16.86	6.44	41.19	47.00	5.81
557.68	17.35	H	2.86	18.37	7.05	42.77	47.00	4.23
594.54	15.10	H	2.62	19.18	7.35	41.63	47.00	5.37

* H : Horizontal, V : Vertical

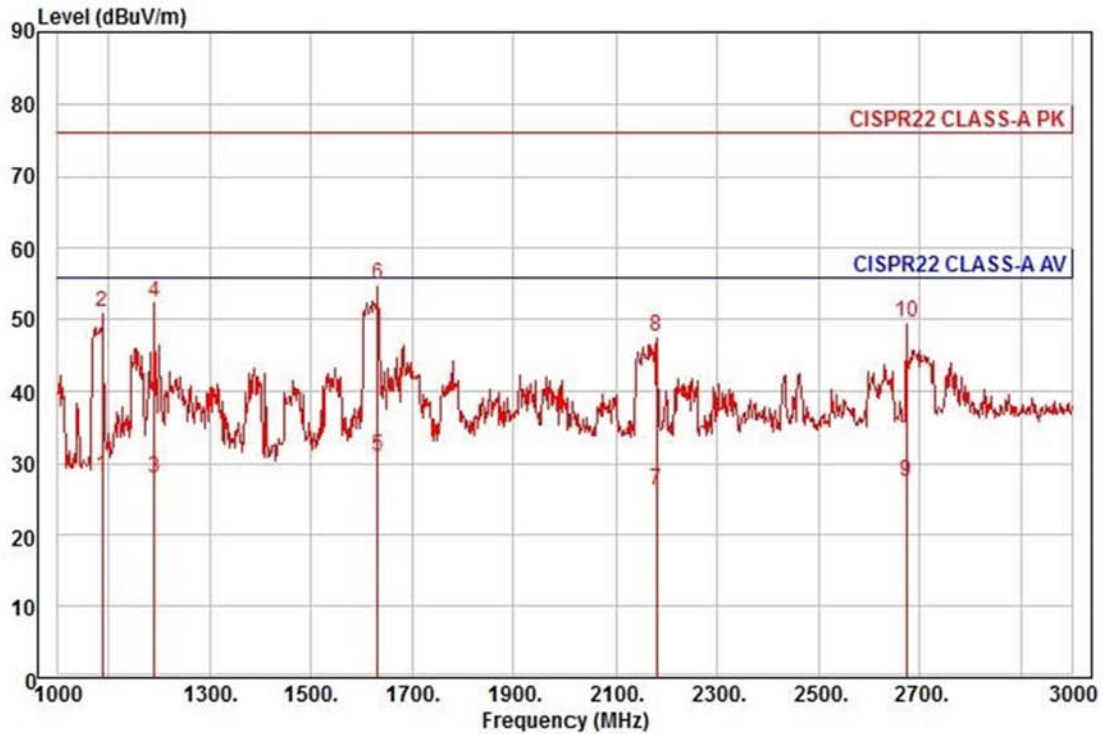
- 24 V (ac)

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
48.43	12.35	V	1.00	13.88	1.72	27.95	40.00	12.05
223.03	11.63	H	4.00	11.81	4.08	27.52	40.00	12.48
297.72	12.34	H	4.00	13.34	4.90	30.58	47.00	16.42
371.44	16.23	V	1.00	15.04	5.45	36.72	47.00	10.28
446.13	15.32	H	2.90	16.35	6.15	37.82	47.00	9.18
482.66	15.56	V	1.97	16.86	6.44	38.86	47.00	8.14

* H : Horizontal, V : Vertical

Radiated Electric Field Emissions(Above 1 GHz)

- 12 V (dc)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 12 V
Memo : (1 - 3) GHz

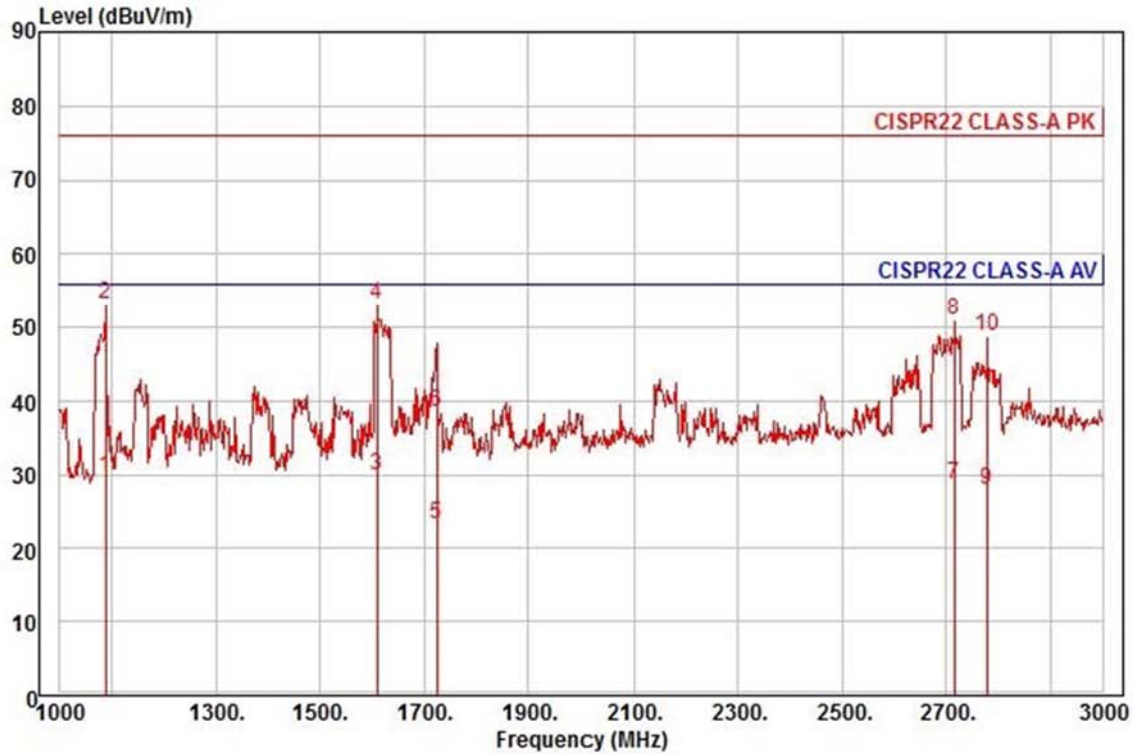
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1088.00	37.71	24.26	6.30	40.08	347	56.00	-27.81	horizontal	Average
2	1088.00	60.45	24.26	6.30	40.08	347	76.00	-25.07	horizontal	Peak
3	1190.00	36.64	24.66	6.60	40.03	321	56.00	-28.13	horizontal	Average
4	1190.00	61.15	24.66	6.60	40.03	321	76.00	-23.62	horizontal	Peak
5 av	1632.00	36.48	26.42	7.86	39.81	347	56.00	-25.05	horizontal	Average
6 pp	1632.00	60.45	26.42	7.86	39.81	347	76.00	-21.08	horizontal	Peak
7	2180.00	28.22	28.32	9.42	39.73	60	56.00	-29.77	horizontal	Average
8	2180.00	49.58	28.32	9.42	39.73	60	76.00	-28.41	horizontal	Peak
9	2674.00	27.08	29.53	10.79	40.02	318	56.00	-28.62	horizontal	Average
10	2674.00	49.24	29.53	10.79	40.02	318	76.00	-26.46	horizontal	Peak



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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 12 V
Memo : (1 - 3) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1088.00	39.13	24.26	6.30	40.08	338	56.00	-26.39	vertical	Average
2	1088.00	62.76	24.26	6.30	40.08	338	76.00	-22.76	vertical	Peak
3 av	1610.00	35.50	26.33	7.80	39.82	338	56.00	-26.19	vertical	Average
4 pp	1610.00	59.03	26.33	7.80	39.82	338	76.00	-22.66	vertical	Peak
5	1724.00	28.25	26.78	8.13	39.77	358	56.00	-32.61	vertical	Average
6	1724.00	43.31	26.78	8.13	39.77	358	76.00	-37.55	vertical	Peak
7	2716.00	28.27	29.63	10.91	40.05	360	56.00	-27.24	vertical	Average
8	2716.00	50.54	29.63	10.91	40.05	360	76.00	-24.97	vertical	Peak
9	2778.00	27.12	29.79	11.08	40.08	358	56.00	-28.09	vertical	Average
10	2778.00	47.94	29.79	11.08	40.08	358	76.00	-27.27	vertical	Peak

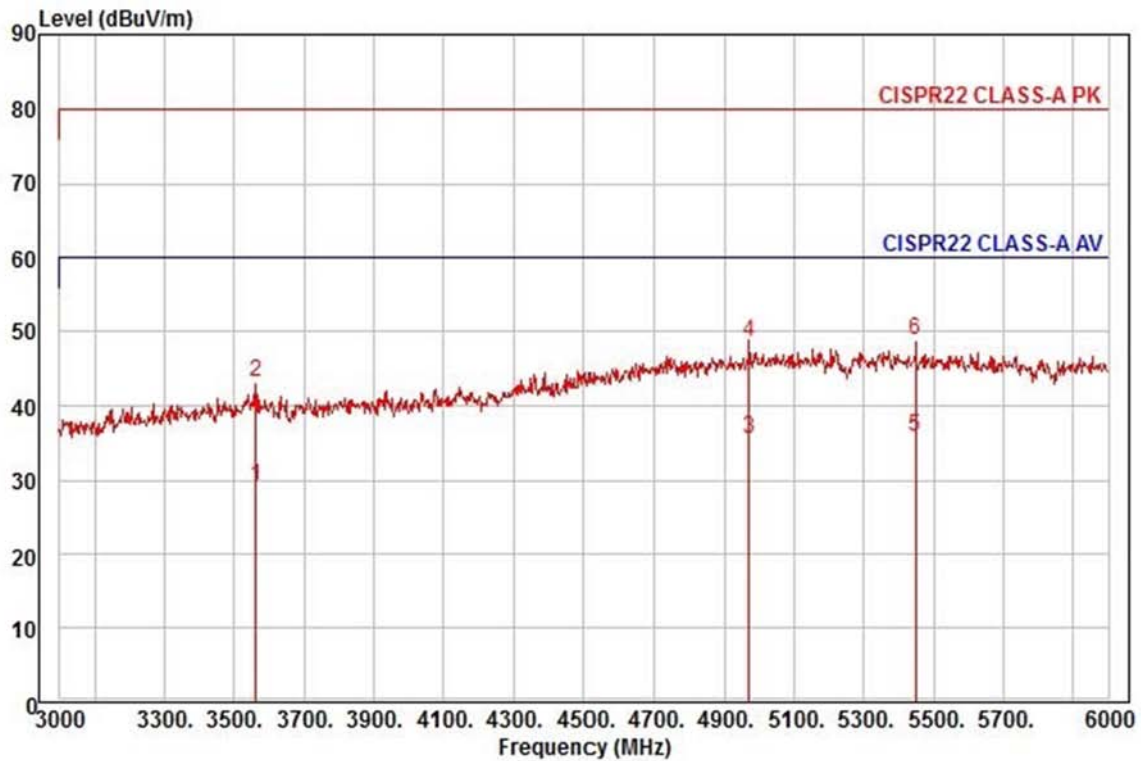
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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 12 V
Memo : (3 - 6) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3561.00	25.88	31.27	12.45	40.32	75	60.00	-30.72	horizontal	Average
2	3561.00	39.80	31.27	12.45	40.32	75	80.00	-36.80	horizontal	Peak
3	4971.00	23.64	37.55	14.82	40.41	106	60.00	-24.40	horizontal	Average
4	4971.00	36.67	37.55	14.82	40.41	106	80.00	-31.37	horizontal	Peak
5 pp	5448.00	23.68	36.82	15.69	40.35	207	60.00	-24.16	horizontal	Average
6 pk	5448.00	36.56	36.82	15.69	40.35	207	80.00	-31.28	horizontal	Peak

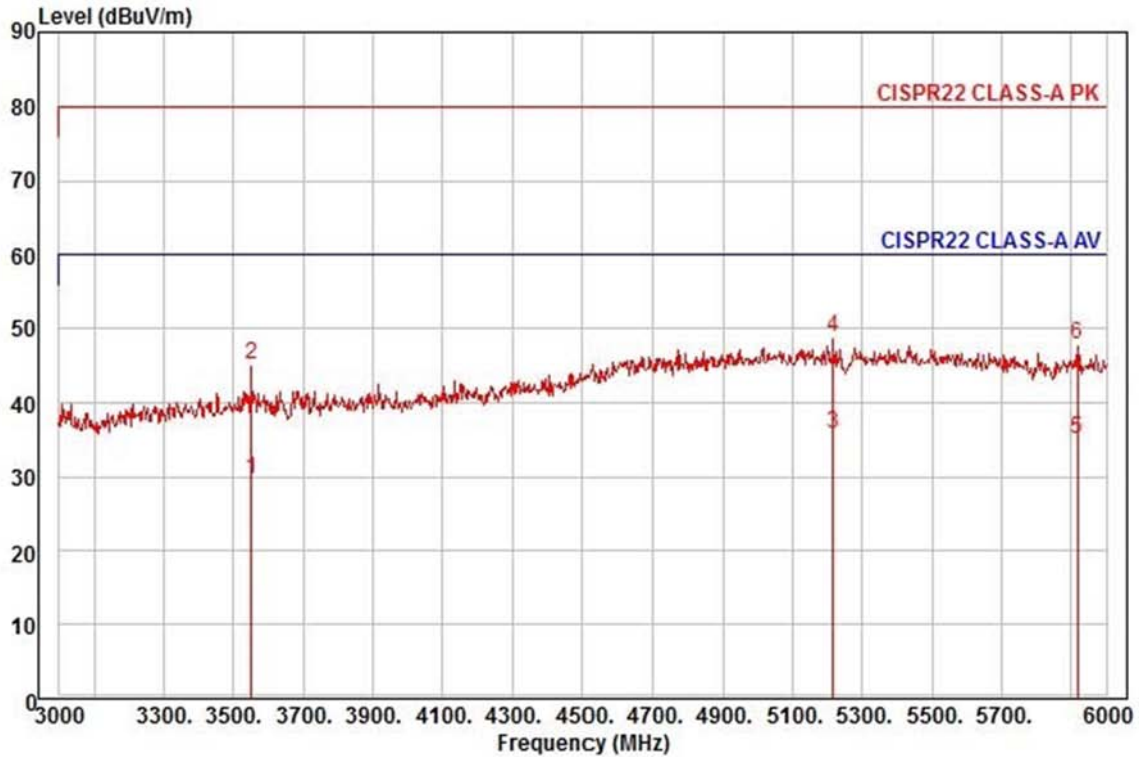
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Test report No.:
KES-E1-16T0045
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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 12 V
Memo : (3 - 6) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3552.00	26.28	31.26	12.43	40.32	5	60.00	-30.35	vertical	Average
2	3552.00	41.65	31.26	12.43	40.32	5	80.00	-34.98	vertical	Peak
3 pp	5217.00	23.63	37.28	15.26	40.38	208	60.00	-24.21	vertical	Average
4 pk	5217.00	36.67	37.28	15.26	40.38	208	80.00	-31.17	vertical	Peak
5	5919.00	22.84	35.86	16.54	40.28	285	60.00	-25.04	vertical	Average
6	5919.00	35.68	35.86	16.54	40.28	285	80.00	-32.20	vertical	Peak

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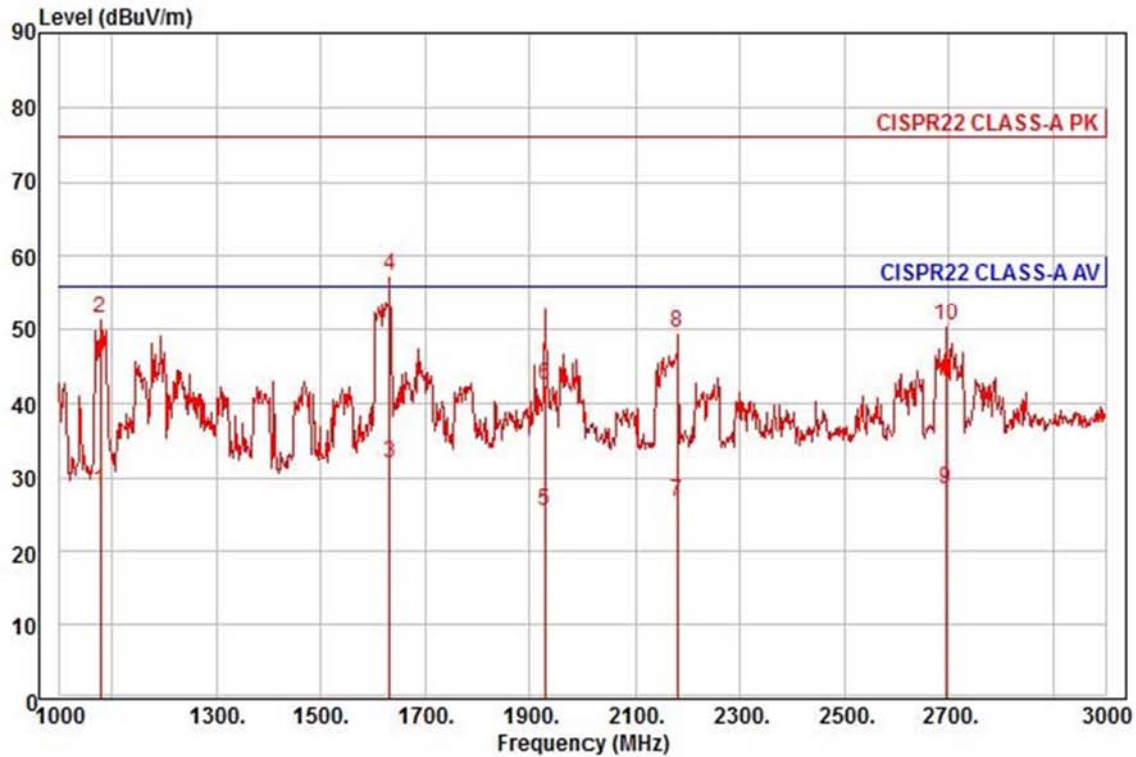


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Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
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Test report No.:
KES-E1-16T0045
Page (45) of (65)

- 24 V (ac)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 24 V
Memo : (1 - 3) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1078.00	37.84	24.22	6.27	40.08	22	56.00	-27.75	horizontal	Average
2	1078.00	61.10	24.22	6.27	40.08	22	76.00	-24.49	horizontal	Peak
3 av	1632.00	37.50	26.42	7.86	39.81	346	56.00	-24.03	horizontal	Average
4 pp	1632.00	62.84	26.42	7.86	39.81	346	76.00	-18.69	horizontal	Peak
5	1930.00	28.83	27.60	8.72	39.66	283	56.00	-30.51	horizontal	Average
6	1930.00	45.66	27.60	8.72	39.66	283	76.00	-33.68	horizontal	Peak
7	2180.00	28.71	28.32	9.42	39.73	39	56.00	-29.28	horizontal	Average
8	2180.00	51.60	28.32	9.42	39.73	39	76.00	-26.39	horizontal	Peak
9	2694.00	28.11	29.58	10.85	40.03	323	56.00	-27.49	horizontal	Average
10	2694.00	50.04	29.58	10.85	40.03	323	76.00	-25.56	horizontal	Peak

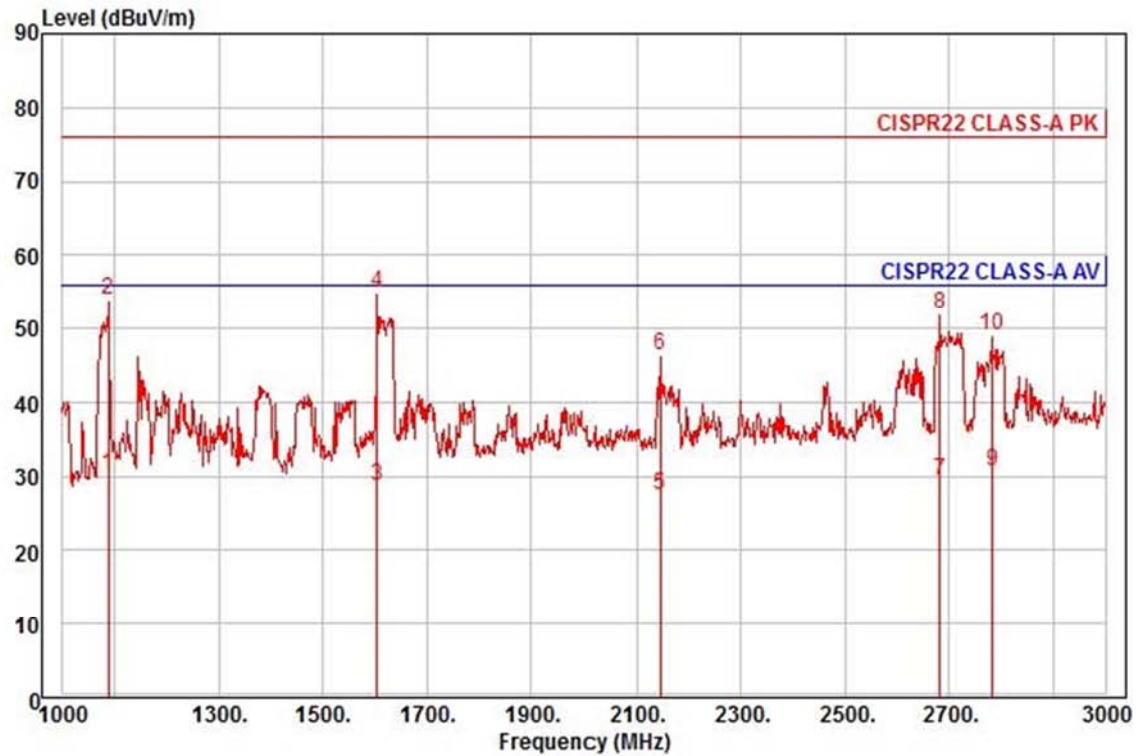
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Test report No.:
KES-EI-16T0045
Page (46) of (65)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 24 V
Memo : (1 - 3) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1088.00	39.64	24.26	6.30	40.08	344	56.00	-25.88	vertical	Average
2	1088.00	63.56	24.26	6.30	40.08	344	76.00	-21.96	vertical	Peak
3	1604.00	34.51	26.31	7.78	39.82	324	56.00	-27.22	vertical	Average
4 pp	1604.00	60.70	26.31	7.78	39.82	324	76.00	-21.03	vertical	Peak
5	2146.00	29.67	28.24	9.33	39.71	333	56.00	-28.47	vertical	Average
6	2146.00	48.47	28.24	9.33	39.71	333	76.00	-29.67	vertical	Peak
7	2682.00	28.98	29.55	10.82	40.03	356	56.00	-26.68	vertical	Average
8	2682.00	51.72	29.55	10.82	40.03	356	76.00	-23.94	vertical	Peak
9 av	2784.00	29.84	29.80	11.10	40.08	5	56.00	-25.34	vertical	Average
10	2784.00	48.30	29.80	11.10	40.08	5	76.00	-26.88	vertical	Peak

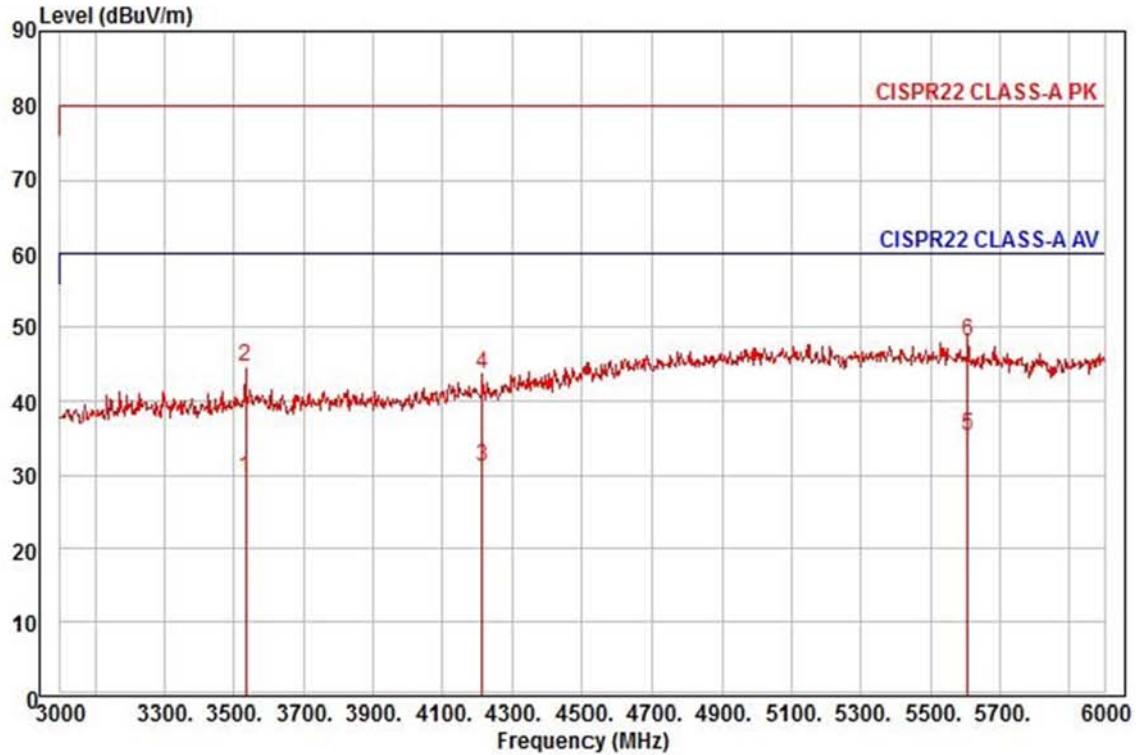
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Test report No.:
KES-E1-16T0045
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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 24 V
Memo : (3 - 6) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3534.00	26.40	31.23	12.41	40.32	307	60.00	-30.28	horizontal	Average
2	3534.00	41.42	31.23	12.41	40.32	307	80.00	-35.26	horizontal	Peak
3	4215.00	24.84	33.24	13.43	40.41	148	60.00	-28.90	horizontal	Average
4	4215.00	37.35	33.24	13.43	40.41	148	80.00	-36.39	horizontal	Peak
5 pp	5607.00	23.30	36.49	15.97	40.33	205	60.00	-24.57	horizontal	Average
6 pk	5607.00	36.04	36.49	15.97	40.33	205	80.00	-31.83	horizontal	Peak

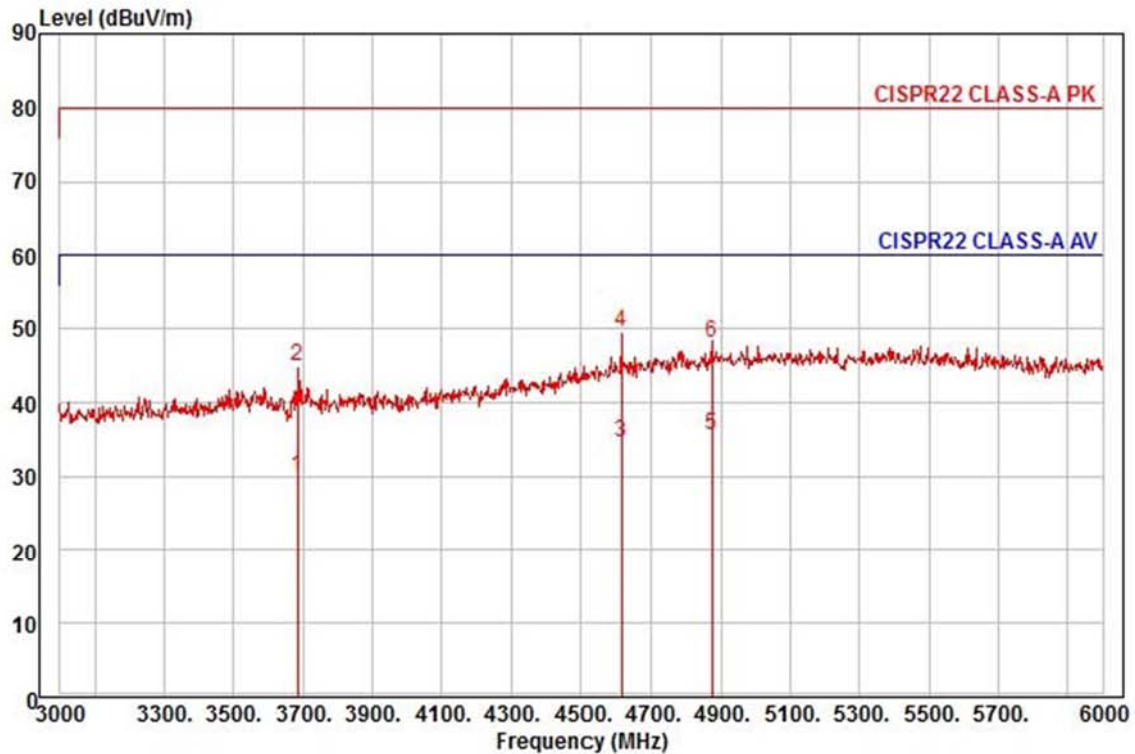
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Test report No.:
KES-E1-16T0045
Page (48) of (65)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SCB-6003P
Mode : 24 V
Memo : (3 - 6) GHz

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3684.00	26.13	31.48	12.61	40.35	4	60.00	-30.13	vertical	Average
2	3684.00	41.20	31.48	12.61	40.35	4	80.00	-35.06	vertical	Peak
3	4614.00	25.19	35.52	14.16	40.41	13	60.00	-25.54	vertical	Average
4 pk	4614.00	40.15	35.52	14.16	40.41	13	80.00	-30.58	vertical	Peak
5 pp	4875.00	24.22	37.01	14.64	40.41	270	60.00	-24.54	vertical	Average
6	4875.00	36.75	37.01	14.64	40.41	270	80.00	-32.01	vertical	Peak

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Harmonic Current Emissions and Voltage Fluctuations and Flicker

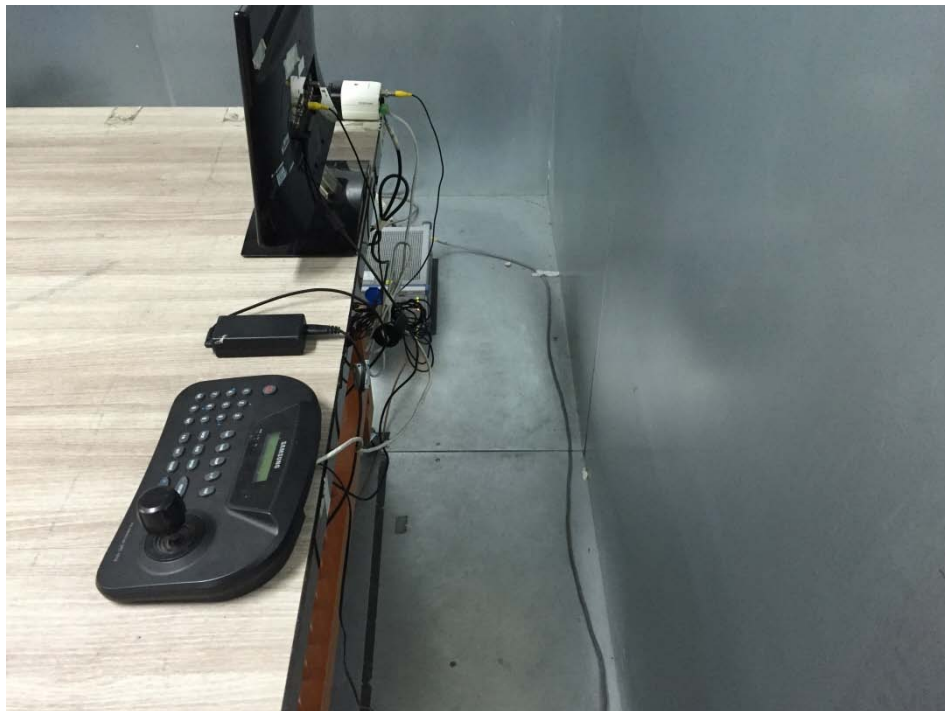
Test Data - Voltage Fluctuations

Maximum Flicker results

	E.U.T values	Limit	Result
Pst	0.028	1.00	PASS
Plt	0.028	0.65	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.045	4.00	PASS
dt [s]	0.000	0.50	PASS

Test Setup Photos and Configuration

Conducted Voltage Emissions



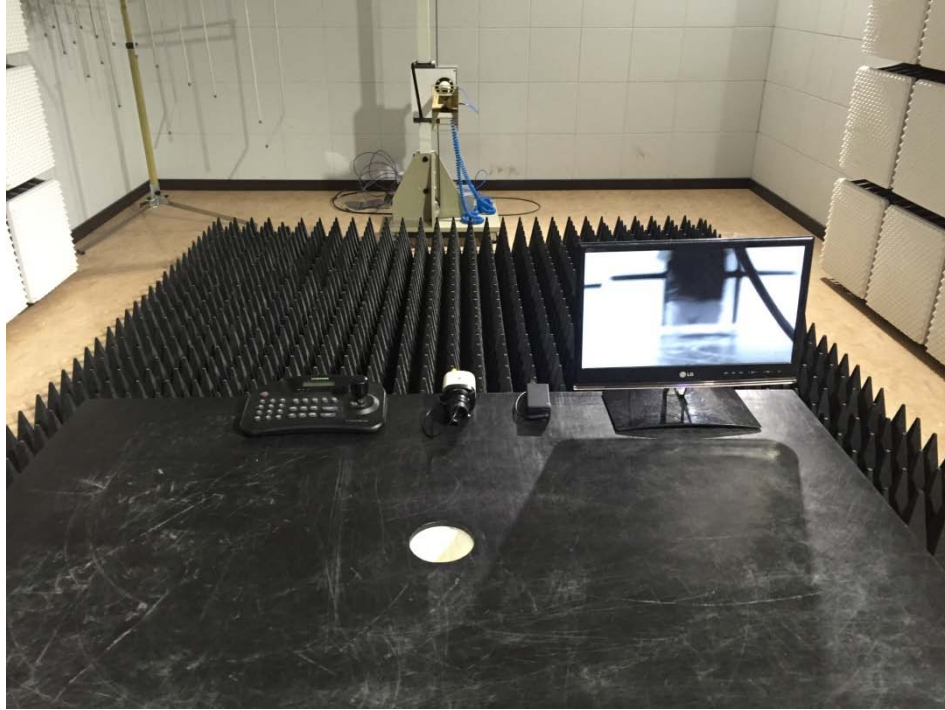
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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Harmonic Current Emissions and Voltage Fluctuations and Flicker

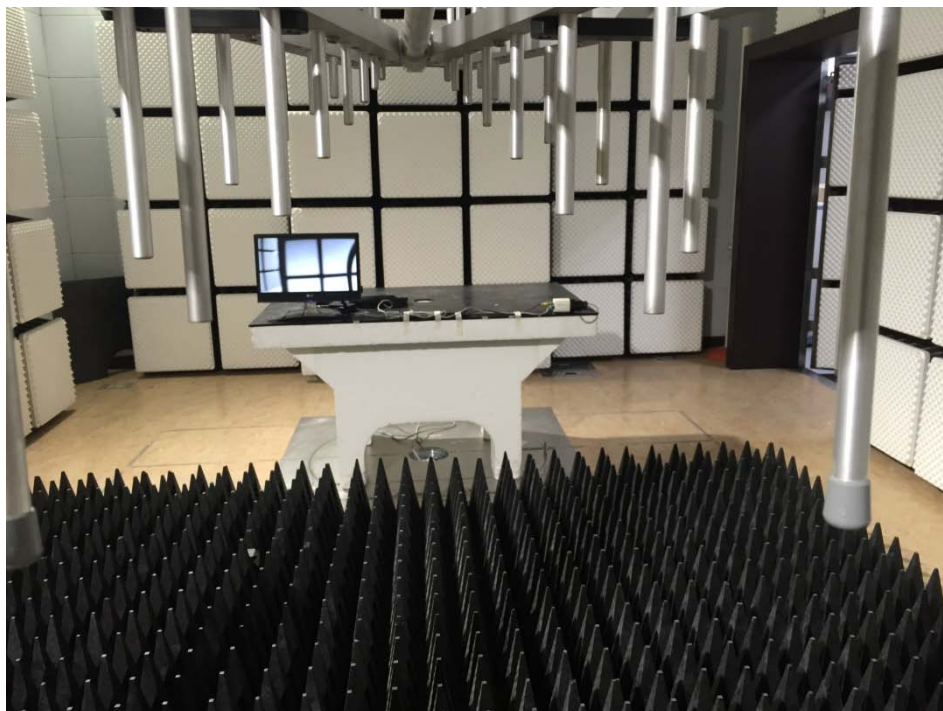


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Electrostatic Discharge



Radiated Electric Field Immunity



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Electrical Fast Transients/Bursts



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Surge Transients



Conducted Disturbance



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Voltage Dips and Short Interruptions



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E.U.T External Photographs

(Top)



(Bottom)



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E.U.T Internal Photographs

(Internal View)



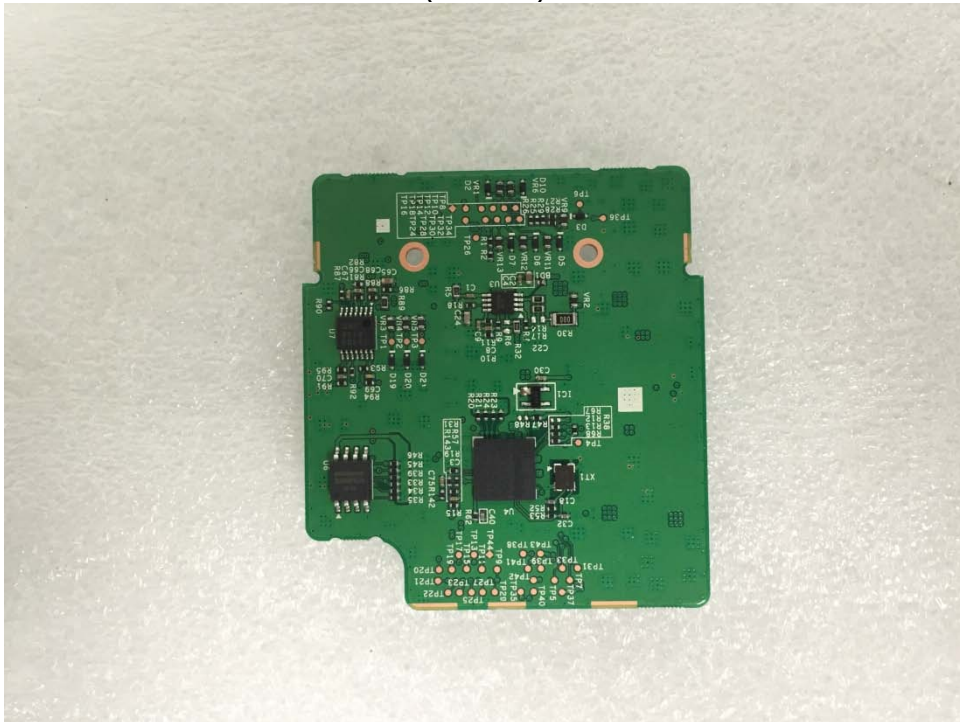
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Main Board EUT Internal View – Main Board

(Top)



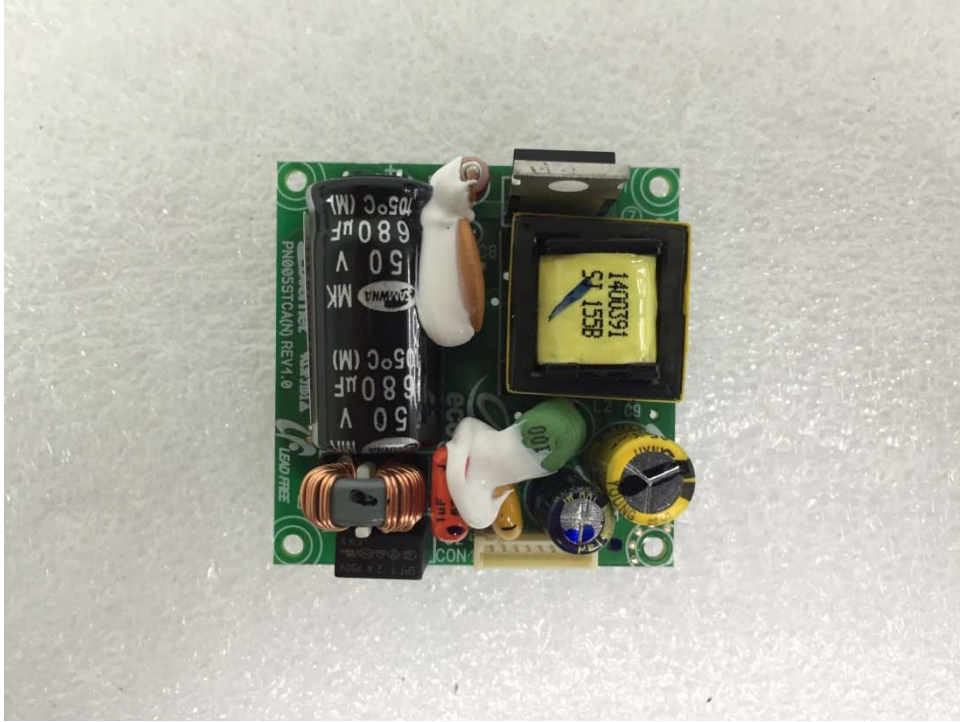
(Bottom)



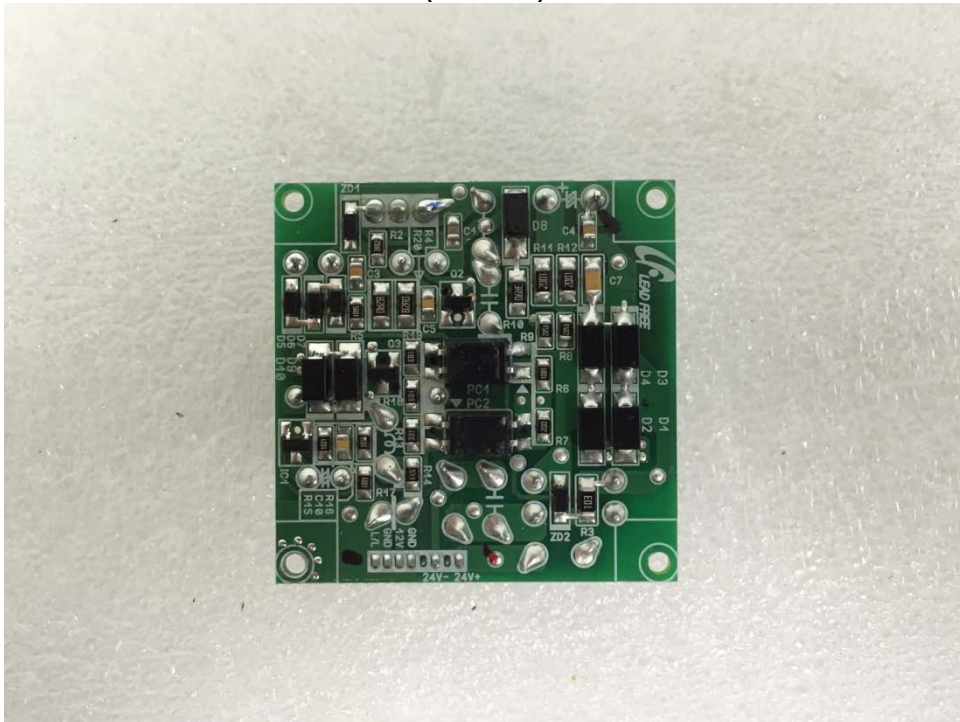
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Main Board EUT Internal View – Power Board

(Top)



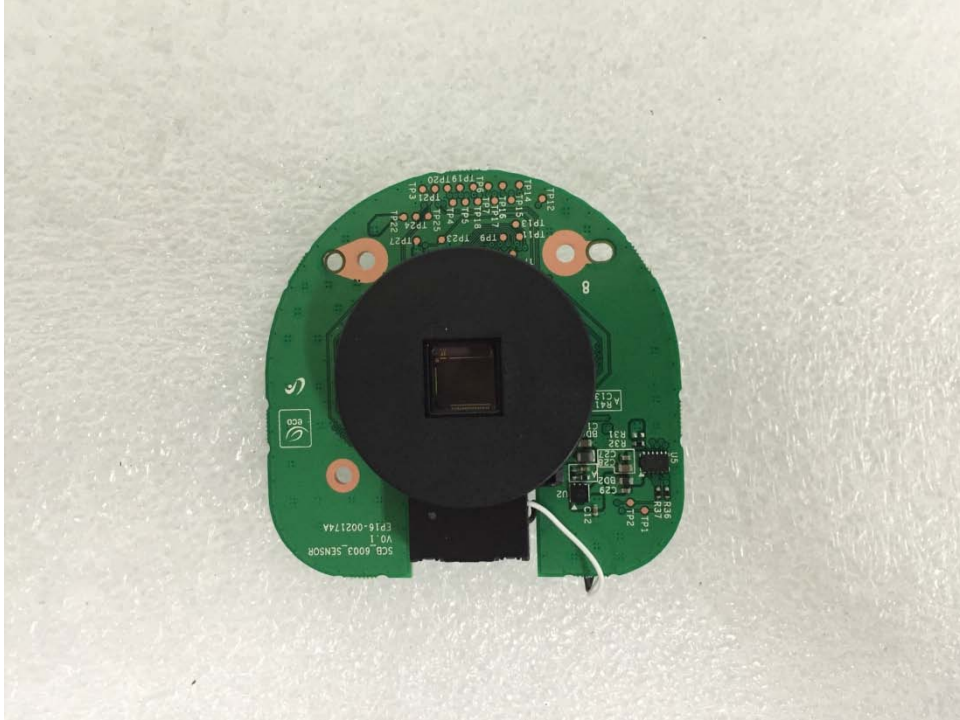
(Bottom)



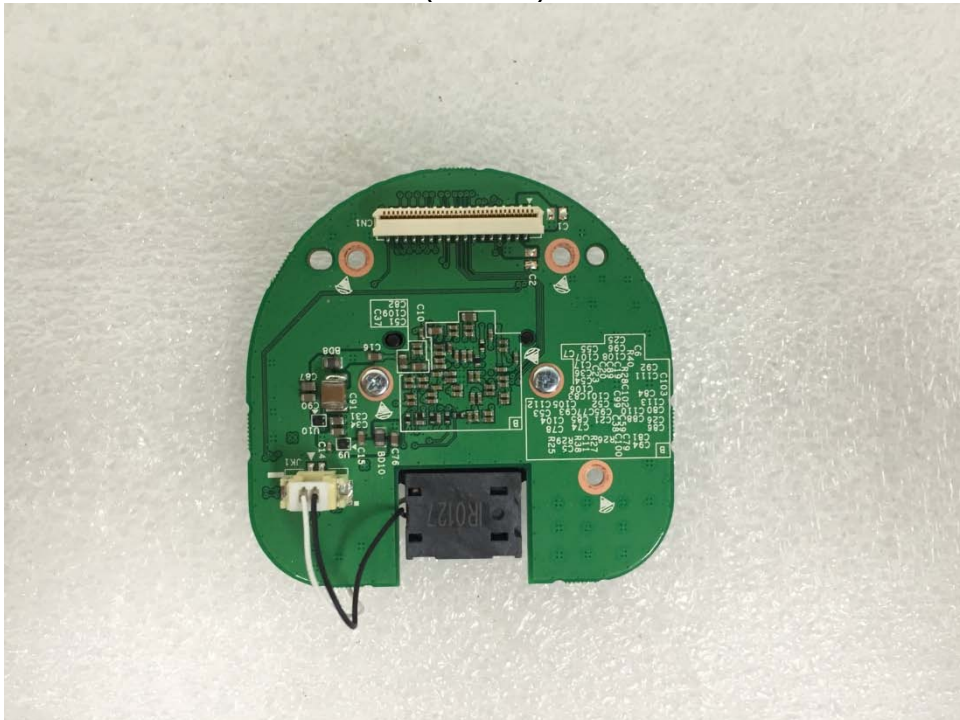
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Main Board EUT Internal View – Lens Board

(Top)



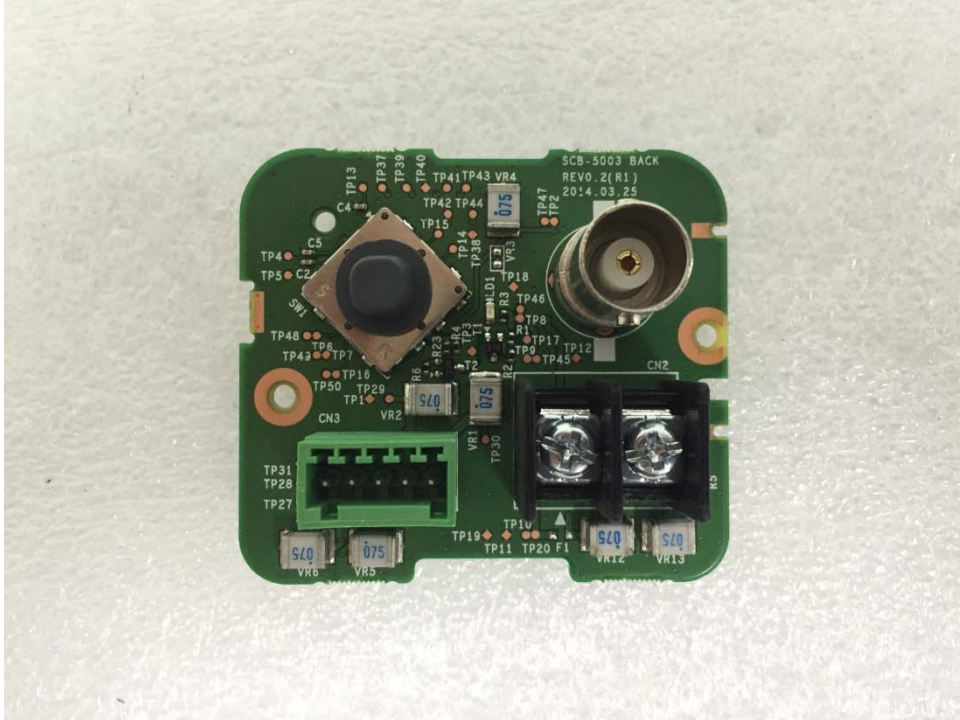
(Bottom)



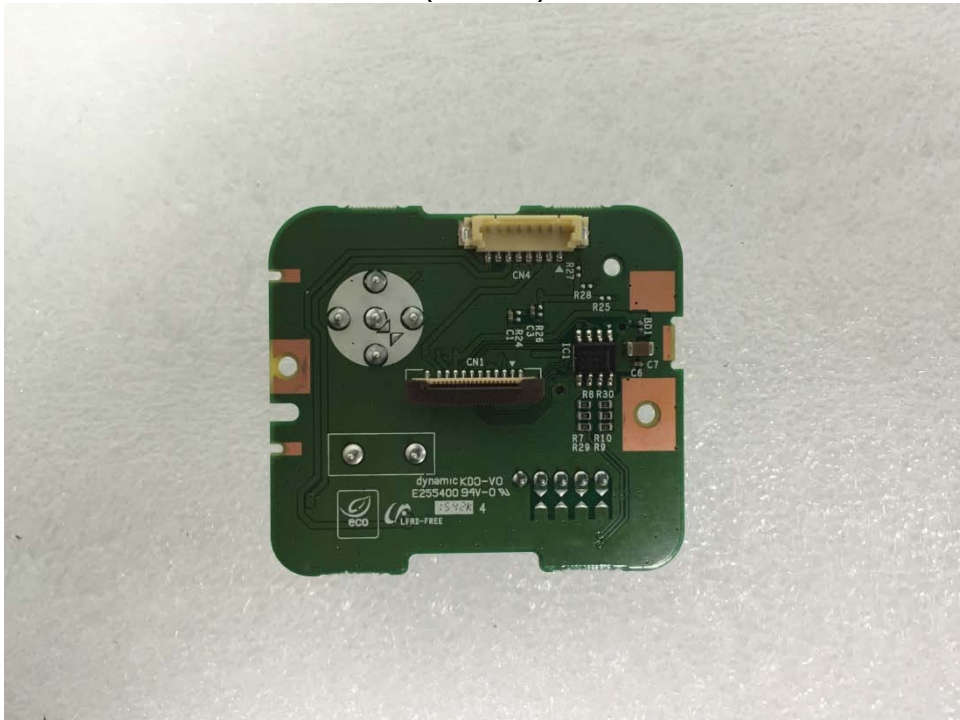
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Main Board EUT Internal View – Port Board

(Top)



(Bottom)



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Label and Location



ANALOG CAMERA

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Manufacturer : Tianjin Samsung Techwin Opto-Electronic Co., Ltd.

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